

BUSHFIRE MANAGEMENT PLAN BANKSIA GROVE, FLYNN DRIVE, BANKSIA GROVE

PREPARED FOR:

LWP PROPERTY GROUP PTY LTD

MAY 2021

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BANKSIA GROVE, FLYNN DRIVE BUSHFIRE MANAGEMENT PLAN MAY 2021

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1. BACKGROUND INFORMATION

LWP Property Group Pty Ltd commissioned MBS Environmental to prepare an updated bushfire management plan (BMP) for unsold and Lots currently undergoing engineering ahead of sale at its Banksia Grove development area (the Site) within the City of Wanneroo (the City) to support planning approvals processes. The broad aim of the assessment process associated with preparation of the BMP was to identify potential bush fire risks to future properties and their management when the site is developed. This document includes Lots to be prepared for sale in the northern and eastern portions of the development area, some Lots in the north-western area, and a single remaining Lot in Grandis Blvd (Lot 4447) (Figure 1).

Portions of the Site are located within 100 m of vegetation designated as being bushfire prone, necessitating the need for the bushfire attack level assessment (BAL-assessment) and assigning a BAL-rating that will determine appropriate construction standards as per AS 3959:2018. The BAL-assessment component of this document considers current site conditions along with the provisions of *State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas* (Department of Planning and the Western Australian Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Lands and Heritage (DPLH), Western Australian Planning Commission (WAPC), and Department of Fire and Emergency Services (DFES), V1.3, 2017).

1.1 LOCATION

The Lots are primarily located within the northern and eastern portions of the Banksia Grove development area, with some located in the north-western portion and Lot 4447 Grandis Blvd which has not yet had a dwelling constructed. Bush Forever Site 295 is present to the west and development as well as to the north across Flynn Drive, with the Wanneroo Golf Course also present across Flynn Drive to the north. Existing and current development is occurring to the south, with remnant bushland present across Old Yanchep Road to the east. (Figure 1)

1.2 AIMS AND OBJECTIVES

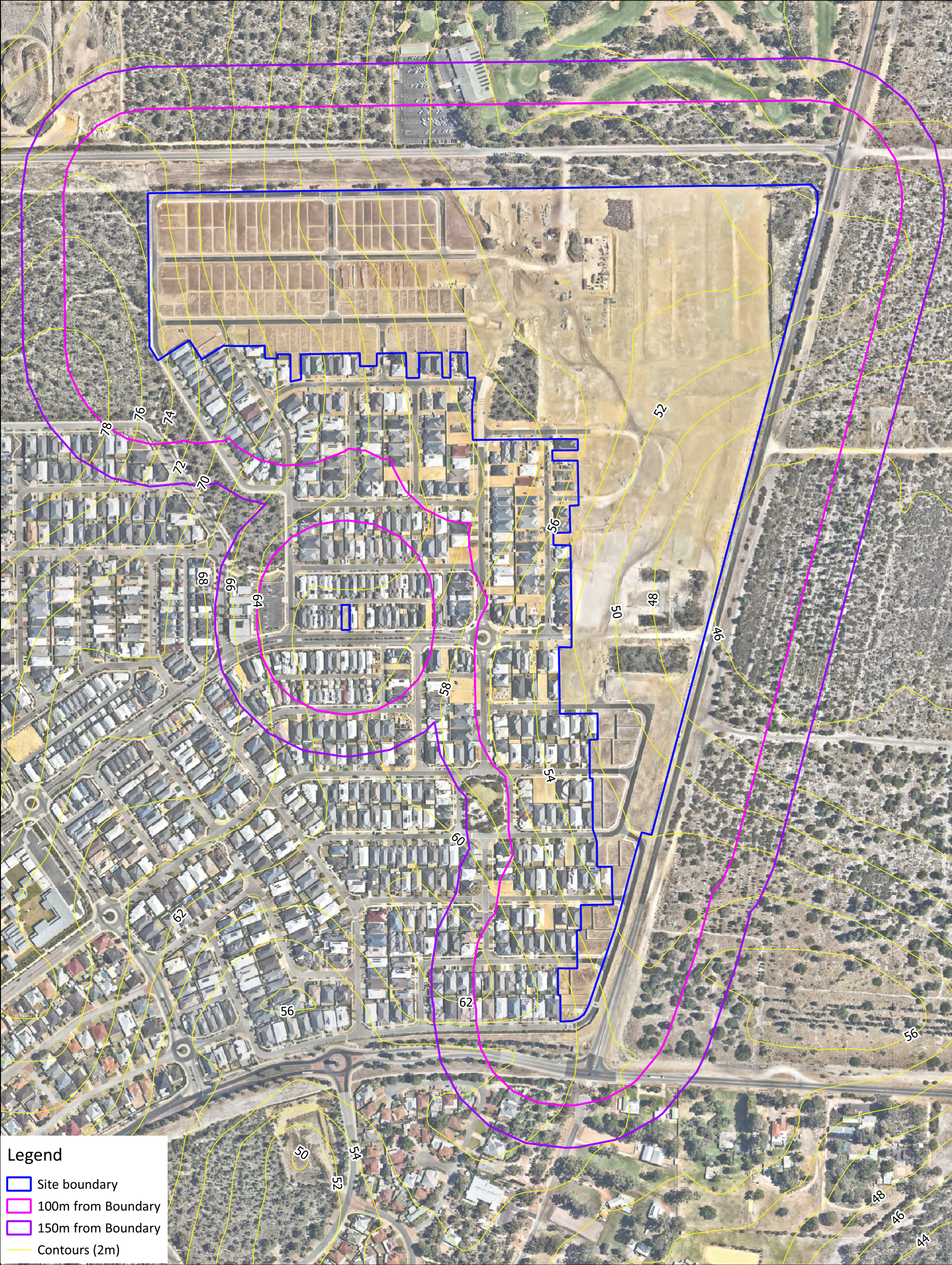
The aim of the BMP is to outline the fire management methods and requirements that will be implemented within the Site. Accordingly, broad aims include:

- Reduce the occurrence of and minimise the impact of fire to the life and property of future residents and the environment.
- Allow easy access of fire-fighters if a fire does occur.
- Protect the landscape within the site as far as is possible.
- Document fire prevention requirements of the area to which it relates.

The objectives of this BMP are to:

- Define land use areas and values within the Site, with the entire subdivision being developed as urban residential Lots except for the landscape protection area and various locations designation public open space.
- Define and rank fire hazard areas according to the vegetation type and fire fuels present.
- Outline the roles and responsibilities of individuals and organisations in relation to fire management within the Site.
- Document fire management strategies for the Site, taking into consideration:
 - Vegetation to be retained in the public open space area.
 - The need for building construction standards where vegetated areas interface with urban development.

- Identify access for fire-fighting operations and daily maintenance in an around vegetated areas and stages of development.
- Define an assessment procedure that will evaluate the effectiveness and impact of existing and proposed fire prevention activities and strategies.
- Document the performance criteria and acceptable solutions adopted for the site.



Legend

- Site boundary
- 100m from Boundary
- 150m from Boundary
- Contours (2m)

Scale: 1:4000
Original Size: A3
Aerial Photo Date: February 2021
Grid: GDA 94 Zone 50 (EPSG:28350)

0 100 200 m

Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

Figure 1

Location and Contours

1.3 DOCUMENT PREPARATION

Sue Brand, an accredited Level 2 bushfire planning and design (BPAD) practitioner with the Fire Protection Association Australia has prepared this document. Activities involved with the BMP preparation process included:

- Assessing the vegetation type and class present within and adjacent to the Site using descriptions provided in AS 3959:2018 *Construction of Buildings in Bushfire Prone Areas*.
- Assigning hazard ratings based on the vegetation types present on and offsite.
- Determining BAL ratings and suggesting management strategies that could be implemented based on current and projected site considerations.
- Preparing the bushfire management plan.

2. CONSIDERATION OF BUSHFIRE THREAT

2.1 SITE CHARACTERISTICS

2.1.1 Regional Context

Perth is located within the Swan Coastal Plain region of the Interim Biogeographical Regionalisation of Australia (IBRA). The Swan Coastal Plain comprises of two major divisions, namely Swan Coastal Plain 1 – Dandaragan Plateau and Swan Coastal Plain 2 – Perth Coastal Plain. The Site is located in the Perth subregion, which is broadly characterised as including areas of Jarrah and Banksia woodlands on sandy soils in a series of sand dunes, along with wetland areas, often within the interdunal swales (Mitchell, Williams and Desmond, 2002).

2.1.2 Vegetation

Little vegetation is retained within the Banksia Grove development area, with:

- No Bush Forever sites present within the site boundaries, however, two components of Bush Forever Site 295 are present to the west of the site and north of Flynn Drive.
- No conservation category wetlands present.
- No threatened ecological communities present.
- No declared rare or priority listed flora species present.

2.1.3 Revegetation/Landscaping

While no additional native vegetation will be cleared to accommodate the remainder of the development, there will be no revegetation requirement.

2.1.4 Land Use

Most of the remaining land within the Banksia Grove development area is cleared land that has been or is expected to undergo civil engineering works ahead of sale and building (Figure 2). Development is well progressed to the south.



Figure 2: Current Land Use

2.1.5 Climate

The climate experienced in the area is Mediterranean, with dry, hot summers and cool, wet winters. The Bureau of Meteorology (2021) describes the climate at the Perth Airport (Station 009021) as:

- Average rainfall is 771.6 mm pa, with the majority falling between May and August.
- Average maximum temperature ranges from 17.9 °C in winter to 31.9 °C in summer, with the highest recorded maximum being 46.7 °C.
- Average minimum temperatures range from 8.0 °C in winter to 17.5 °C in summer, with the lowest recorded minimum being -1.3 °C.
- Predominant wind directions include morning easterlies followed by south-westerly sea breezes during summer months when the risk of fire is greatest. The average wind speed is 23.8 km/h with gusts of more than 100 km/h possible, particularly during storm events.

3. BUSHFIRE ASSESSMENT

3.1 VEGETATION CLASSIFICATION

All vegetation within 100 m of the proposed Lots was classified in accordance with Clause 2.2.3 of *AS 3959:2018 Construction of Buildings in Bushfire Prone Areas*. All classified vegetation within 100 m of the Site is *Class D Scrub* that will be retained in the longer term (Figure 3, Figure 6), with all other areas being subject to exclusion clauses.

3.1.1 Area 1: Class D Scrub

Class D Scrub is characterised by shrubs 2 – 4 m high with a continuous canopy. This vegetation class represents all the classified vegetation within 100 m of the Site, and is present within (Figure 3):

- Bush Forever Site 295 to the west and north of Flynn Drive.
- The patches of remnant vegetation within the Wanneroo Golf Club north of Flynn Drive.
- Remnant bushland across Old Yanchep Road to the east, noting that some of this vegetation class is present in an immature form as it has been restored after the clearing of a pine forest; it has been considered as the mature form for the purposes of the BAL-assessment component of this BMP.


Area	1	Classification or Exclusion Clause	Class D Scrub
			
Photo ID: 1 – Bush Forever Site 295 to the West			
			
Photo ID: 2 – Bush Forever Site 295 across Flynn Drive to the North			



Figure 3: Class D Scrub

3.1.2 Area 2: Low-threat Vegetation

Low threat vegetation in the form of managed fairways are present within the Wanneroo Golf Course north of Flynn Dr that is subject to exclusion clause 2.2.3.2 (f) of AS 3959:2018 (Figure 4).

Area	2	Classification or Exclusion Clause	xclusion Clause 2.2.3.2 (f)
<p>Photo ID: 4 – Wanneroo golf course</p>			
<p>Photo ID: 5 – Retained patch of vegetation off Grandis Blvd</p>			

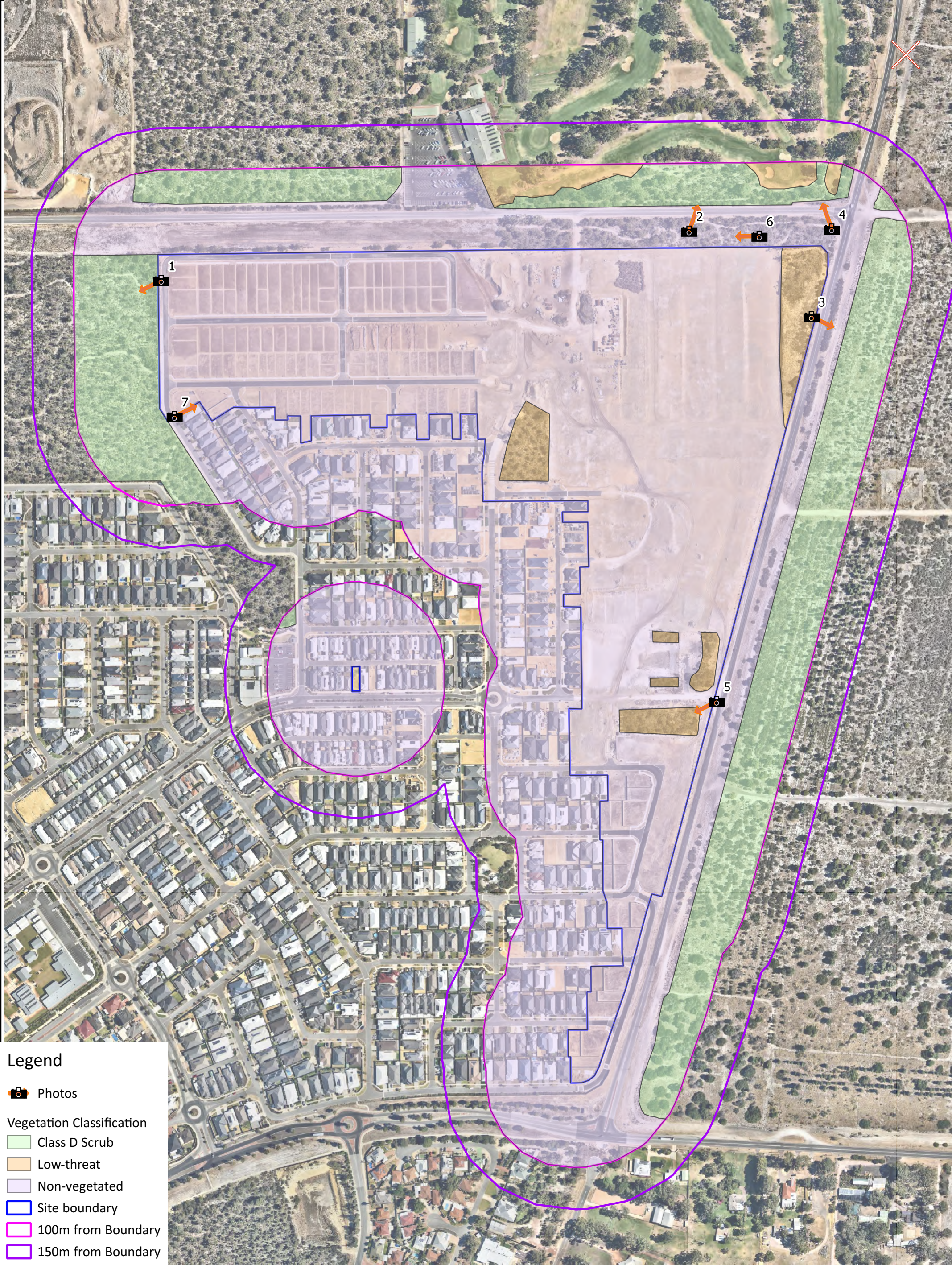
Figure 4: Low-threat Vegetation

3.1.3 Area 3: Non-vegetated Areas

Non-vegetated areas are present in the form of cleared areas within and in proximity to the Site, roads, footpaths, and existing buildings within areas currently being developed to the south (Figure 5). Vegetation within the Flynn Dr road reserve to the north of the site has been cleared and thus now non-vegetated, thus is subject to exclusion clause 2.2.3.2 (e) of AS 3959:2018.

Area	3	Classification or Exclusion Clause	Exclusion clause 2.2.3.2 (e)
			
Photo ID: 5 – Flynn Drive road reserve to the north			
			
Photo ID: 6 – Current site development works			

Figure 5: Non-vegetated Areas



Legend

Photos

Vegetation Classification

- Class D Scrub
- Low-threat
- Non-vegetated

Site boundary

100m from Boundary

150m from Boundary

Scale: 1:4000
Original Size: A3
Aerial Photo Date: February 2021
Grid: GDA 94 Zone 50 (EPSG:28350)

0 100 200 m

Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

Figure 6

Vegetation Class as per AS 3959:2018

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3.2 BUSHFIRE HAZARD LEVEL

3.2.1 Bushfire Hazard Assessment

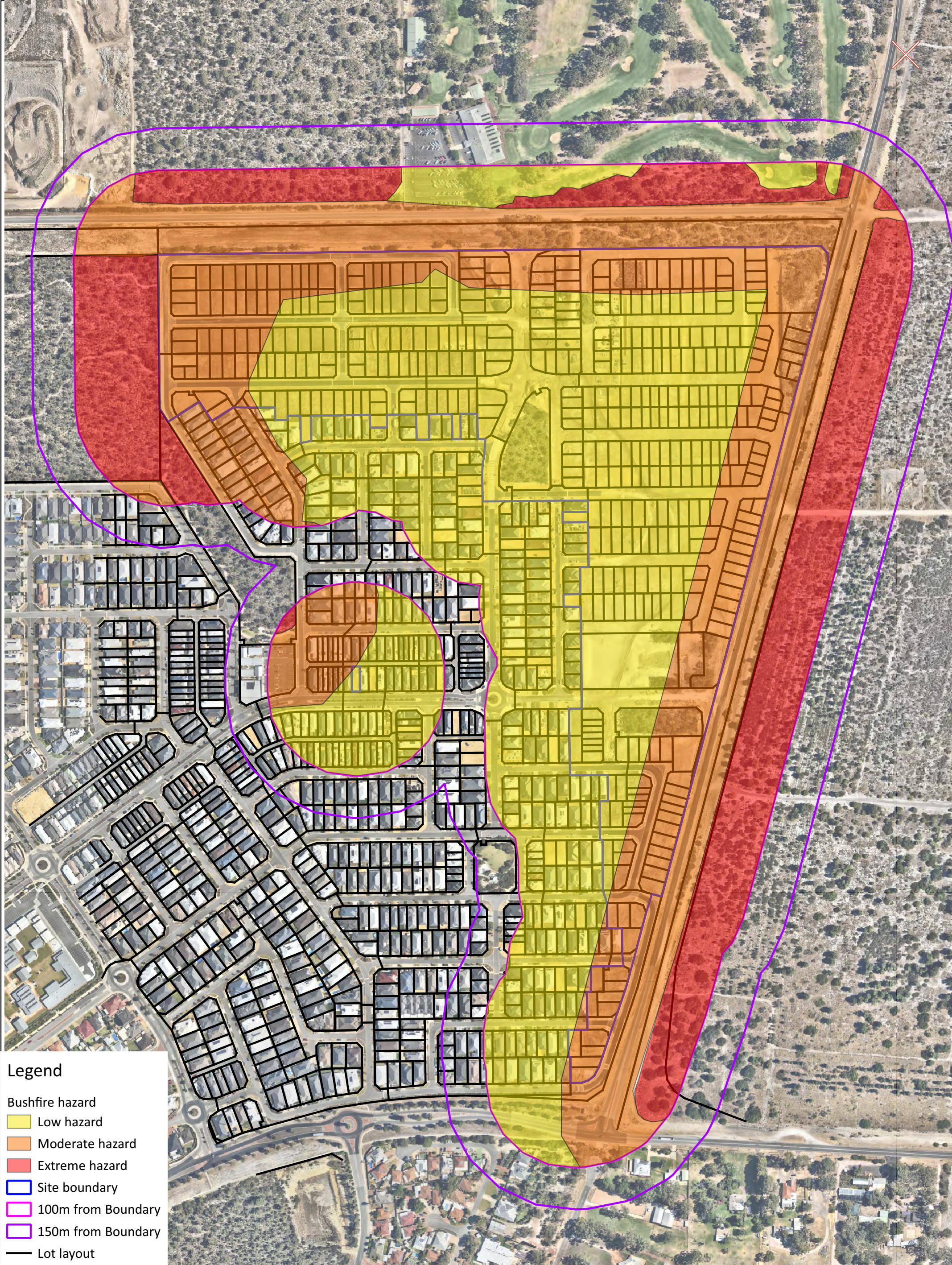
Depending on the vegetation type, a hazard rating of low, moderate, or extreme is assigned. The nature of the current vegetation in and around the Banksia Grove development area means that the bushfire hazard is primarily extreme due to the presence of the Class D Scrub (Figure 7). All locations within 100 m of an area with an extreme hazard rating are shown as having a moderate hazard rating due to the increased risk levels associated with the presence vegetation with an extreme hazard rating. All other locations have a Low hazard rating. As most of the vegetation within the Site has been cleared, there will be no change to the hazard rating over time as remaining vegetation will be retained in the longer term.

3.2.2 Fire Danger Index (FDI)

The fire danger index for this site is FDI 80, as documented in Table 2.4.3 of AS 3959:2018, which is the nominated FDI for Western Australia.

3.2.3 Potential Fire Impacts

Potential fire impacts within the Banksia Grove development area include smoke, ember attack and radiant heat.



Legend

Bushfire hazard

- Low hazard
- Moderate hazard
- Extreme hazard

Site boundary

100m from Boundary

150m from Boundary

Lot layout

Scale: 1:4000
Original Size: A3
Aerial Photo Date: February 2021
Grid: GDA 94 Zone 50 (EPSG:28350)

0 100 200 m

Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

Figure 7

Bushfire Hazard Rating

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3.3 BAL-ASSESSMENT

The BAL-assessment has been carried out for all Lots that are in the process of construction or yet to be built on within the remainder of the Banksia Grove development area. As all clearing has occurred, this BMP and its associated BAL-assessment considers current site conditions, including areas of vegetation that will be retained in public open space (POS) areas. A series of maps showing the outcomes of the BAL-assessment are provided, with an overview map provided in Figure 8, with detailed maps provided in Appendix 1 and a BAL-rating by Lot table in Appendix 2.

3.3.1 Lot 4447 Grandis Blvd

Lot 4447 is located in proximity of Bush Forever Site 295 to the west and is approximately 88 m from the edge of the classified vegetation, thus it is rated BAL-12.5 (Figure 8).

3.3.2 Northern Portion of Development Site

The northern portion of the Site fronts Bush Forever Site 295 to the west and north, some retained vegetation along the perimeter of the Wanneroo golf course and retained vegetation across Old Yanchep Road to the east. As these areas of vegetation will be retained in the longer term, their presence represents an on-going bushfire threat. Each Lot within 100 m of these areas of vegetation are assigned a BAL-rating as per AS 3959:2018, with none higher than BAL-12.5 due to the presence of roads that provide an acceptable separation distance to building walls.

3.3.3 Eastern Portion of Development Site

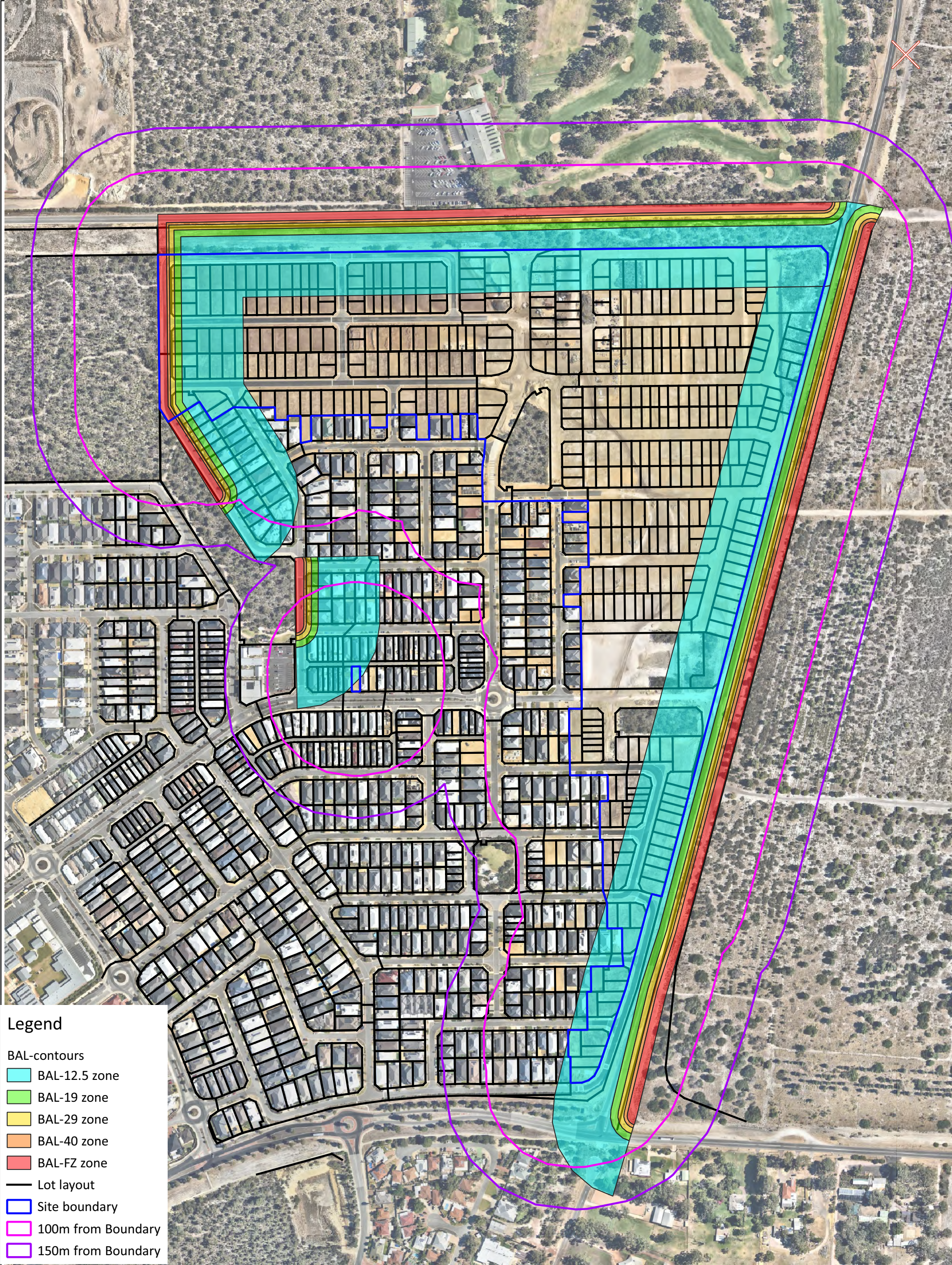
The eastern portion of the Site are those Lots in proximity to Old Yanchep Road and the vegetation along its eastern boundary. As this vegetation will be retained in the longer term, it represents an ongoing bushfire threat to nearby houses. All Lots within 100 m of this vegetation are assigned a BAL-rating, with none higher than BAL-12.5 due to the presence of roads that provide an acceptable separation distance to building walls.

3.3.4 Asset Protection Zone

The asset protection zone (APZ) for Lots is that area that provides the separation distance between the classified vegetation and building walls. For the Banksia Grove development area, it generally commences at the junction of the BAL-40 and BAL-29 zones, or the junction of the orange and yellow zones in (Figure 8). and will extend to the building walls as that is the point where the potential radiant heat impact of a bushfire does not exceed 29 kW/m²; this also demonstrates that bushfire risks on site can be managed.

3.3.5 Staging

The final stages of the Banksia Grove development area are currently undergoing development and the associated planning approval processes. All areas are cleared ahead of the development process meaning that strategies to minimise temporary BAL-ratings are no longer required.



Legend

BAL-contours

- BAL-12.5 zone
- BAL-19 zone
- BAL-29 zone
- BAL-40 zone
- BAL-FZ zone

— Lot layout

— Site boundary

— 100m from Boundary

— 150m from Boundary

Scale: 1:4000
Original Size: A3
Aerial Photo Date: February 2021
Grid: GDA 94 Zone 50 (EPSG:28350)

0 100 200 m

Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

Figure 8

BAL-contours

3.4 IMPLEMENTATION

Implementation of this BMP will continue to be the responsibility of the Developer, LWP Property Group Pty Ltd, both for installation and ongoing maintenance. The Developer will continue to be responsible for bushfire management at the site until:

- POS areas are formally handed over to the City of Wanneroo.
- Lots are sold to individual owners.

The Developer is also responsible for ensuring potential owners of Lots where a BAL-rating applies receive a copy of this BMP.

When ownership arrangements change over time, the responsibility for the maintenance of fire management measures will devolve to the new owner or managing organisation, noting that landowners or managers are responsible for land under their direct control only. For example, for POS areas, the City of Wanneroo will become responsible for ensuring fire fuel loads are maintained at suitable levels, and Lot owners will become responsible for ensuring APZs within their property are maintained. Activities that will be involved with the implementation of this plan are described in Table 1, and which also includes an indication of maintenance responsibilities associated with a particular activity.

Table 1: Implementation Schedule

Item	Activity	Responsibility	Maintenance	Responsibility
1	Ensuring bushfire protection of land and property during the various stages of the development, as detailed in relevant sections of this bushfire management plan	Developer	Checking and maintaining firebreaks, low fuel zones and other protection mechanisms during staging activities on an ongoing basis	Developer
2	Install and maintain firebreak/low fuel zones	Developer	Checking of firebreaks on regular basis, in accordance with City requirements, noting the City of Wanneroo may initiate inspections to ensure compliance	Developer
3	Undertake slashing of any long grass to 50 mm and other weed control to reduce fuel load	Developer	Annual, prior to summer, in accordance with information issued to ratepayers by the City After ceding of POS areas, the City will become responsible for ensuring any long grass that develops over time is slashed	Developer until sale of individual lots or hand over of POS areas to the City
4	Assess fire management implications of proposed landscaping/revegetation plans	Developer	As required, during landscaping design phase	Developer
5	BMP review	Developer	Ensure continued suitability of BMP by reviewing contents in conjunction with current site conditions	Developer

3.5 RESPONSIBILITIES

Responsibilities for bushfire preparedness and response within the Site are shared by the City of Wanneroo, the Developer, and building owners.

3.5.1 Developer Responsibilities

The Developer is responsible for implementing key portions of this BMP, including:

- Landscape designs formulated for areas indicate they will be maintained in a low fire fuel load to meet the requirements of this BMP and AS 3959:2018; any changes to these plans will need to be reviewed in terms of implications from a bushfire management perspective for the site.
- Maintaining any firebreak areas or similar in accordance with City of Wanneroo requirements and guidelines until the land is no longer the responsibility of the developer, such as when POS areas are ceded to the City for ongoing management.
- Providing appropriate information, including a copy of this BMP, to potential purchasers and owners of Lots within the development area that have a BAL 12.5 or higher rating to inform them of the bushfire risks and minimum building construction requirements.
- Arrange for the Section 70A notification on the titles of Lots subject to the requirements of this BMP.

3.5.2 City of Wanneroo Responsibilities

The City of Wanneroo has the responsibility and powers under the Town Planning Scheme and the *Bush Fires Act 1954* to ensure that this BMP, the City of Wanneroo Annual Fire Control Notice, any bushfire information, and any special orders issued under the *Bush Fires Act 1954* are complied with. The City of Wanneroo is responsible for:

- Providing appropriate advice in relation to City requirements for firebreaks, hazard reduction, and any other fire management aspects it requires landowners to comply with to the Developer and property owners as required.
- Ensuring appropriate information is included on titles of Lots subject to a BAL-12.5 or higher rating indicating the requirement to comply with this BMP.

3.5.3 Owner Responsibilities

It is the responsibility of individual property owners building houses near the vegetated areas to:

- For those Lots assigned a BAL rating, ensuring buildings are constructed in accordance with the requirements of relevant sections of AS 3959:2018.
- Where required, maintaining required asset protection zones.
- Include ember shields on evaporative air conditioners.
- Inform DFES as soon as practicable after a fire is noticed within vegetated areas within the Site boundary or nearby bushland.
- Respond to advice from the City of Wanneroo, DFES, or the Developer in relation to maintaining properties in a manner that will reduce potential damage from ember attack.

4. COMPLIANCE AND JUSTIFICATIONS

4.1 SPP 3.7 OBJECTIVES AND APPLICATION OF POLICY MEASURES

The intent of *State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) is to ensure that bushfire risks are considered in a timely manner and that planning documents demonstrate the appropriate application of the various policy measures. Table 2 summarises the intent and objectives of SPP 3.7 and provides evidence of how the Banksia Grove development area complies.

Table 2: Evidence of Compliance with SPP 3.7 Intent and Objectives

SPP Reference	Description	Evidence of Compliance
Intent	<ul style="list-style-type: none"> Ensure that risks associated with bushfires are planned using a risk-based approach. 	<ul style="list-style-type: none"> Preparation of a bushfire management plan in accordance with SPP 3.7. Hazard assessment indicates risks associated with bushland are manageable.
Objective 1	<ul style="list-style-type: none"> Avoid any increase in the threat of bushfire to people, property and infrastructure. 	<ul style="list-style-type: none"> Hazard assessment indicates risks associated with bushland are manageable. Lots within 100 m of vegetation assigned BAL-rating as per AS 3959:2018, with none higher than BAL-12.5.
Objective 2	<ul style="list-style-type: none"> Reduce vulnerability to bushfire. 	<ul style="list-style-type: none"> Hazard assessment indicates risks associated with bushland are manageable. Lots within 100 m of classified vegetation assigned BAL-rating as per AS-3959:2018, with none higher than BAL-12.5.
Objective 3	<ul style="list-style-type: none"> Ensure that higher order strategic planning documents and proposals consider bushfire protection requirements at an early stage. 	<ul style="list-style-type: none"> The planning process has considered the risk of bushfire in an early stage, with BAL-ratings nominated where appropriate, with several reviews, including the preparation of this BMP.
Objective 4	<ul style="list-style-type: none"> Achieve an appropriate balance between bushfire risk management and biodiversity conservation. 	<ul style="list-style-type: none"> Site environmental values have been considered during the planning approvals process, with several reserves containing vegetated remnants and Bush Forever Site 295 retained to the west.

4.2 BUSHFIRE PROTECTION CRITERIA

Table 3 demonstrates the Site's compliance with the Bushfire Protection Criteria; with Figure 8 and the detailed maps in Appendix 1 providing a graphical representation of that compliance.

Table 3: Compliance with Bushfire Protection Criteria

Intent	Acceptable Solutions	Solution
Element 1: Location		
Ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure	A1.1 Development Location	
	<ul style="list-style-type: none"> Bushfire hazard assessment is or will on completion be moderate or low. 	<ul style="list-style-type: none"> The Site is located in an area where the bushfire hazard level is manageable. Bushfire hazard assessment indicates risk is manageable. Several Lots will have a BAL-rating, with none expected to be higher than BAL-12.5.
	<ul style="list-style-type: none"> BAL-rating is BAL-29 or lower. 	<ul style="list-style-type: none"> Bushfire hazard assessment indicates manageable bushfire risk. A number of Lots will have a BAL-rating, with none expected to be higher than BAL-12.5.
Element 2: Siting and Design of Development		
To ensure that the siting and design of development minimises the level of bushfire impact	A2.1 Asset Protection Zone (APZ)	
	<p>Every habitable building is surrounded by, and every proposed lot can achieve an APZ depicted on plans that meets the following:</p> <ul style="list-style-type: none"> Width – bushfire radiant heat does not exceed radiant heat of 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances. Location – APZ contained solely within the boundaries of the Lot on which the building is situated, except in instances where the neighbouring Lot(s) will be managed in a low-fuel state on an ongoing basis, in perpetuity. Management – the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (Schedule1). 	<ul style="list-style-type: none"> The APZ coincides with the boundary between BAL-40 and BAL-29 zones (Figure 8) and includes roads and cleared areas. Site design ensures width is suitable to ensure radiant heat does not exceed 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances. A number of Lots will have a BAL-rating, with none expected to be higher than BAL-12.5.

Intent	Acceptable Solutions	Solution
Element 3: Vehicular Access		
Vehicular access servicing a subdivision/development is available and safe during a bushfire event	A3.1 Two Access Routes	
	<ul style="list-style-type: none"> Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two different destinations and are available to all residents/the public at all times and under all weather conditions. 	<ul style="list-style-type: none"> Site design includes two roads that will connect to the current road network (Figure 8).
	A3.2 Public Road	
	<ul style="list-style-type: none"> Public roads will be constructed in accordance with requirements detailed in Table 4, Column 1 on page 64 of the guidelines. 	<ul style="list-style-type: none"> Internal public roads are constructed in accordance with technical requirements outlined in acceptable solution A3.2.
	A3.3 Cul-de-Sac (including a dead-end road)	
	<p>A cul-de-sac and/or a dead-end road should be avoided in bushfire prone areas. Where no alternative exists (i.e. the lot layout already exists and/or will need to be demonstrated by the proponent), the following requirements are to be achieved:</p> <ul style="list-style-type: none"> Requirements in Table 4, Column 2 on page 64 of the guidelines Maximum length: 200 metres (if public emergency access is provided between cul-de-sac heads maximum length can be increased to 600 metres provided no more than eight lots are serviced and the emergency access way is no more than 600 metres) Turn-around area requirements, including a minimum 17.5 metre diameter head. 	<ul style="list-style-type: none"> Any temporary cul-de-sacs will be constructed in accordance with acceptable solution A3.3. No permanent cul-de-sacs will be constructed.
	A3.4 Battle-axe Blocks	
	<p>Battle-axe access leg should be avoided in bushfire prone areas. Where no alternative exists, (this will need to be demonstrated by the proponent) all of the following requirements are to be achieved:</p> <ul style="list-style-type: none"> Requirements in Table 4, Column 3 Maximum length: 600 metres Minimum width: six metres. 	<ul style="list-style-type: none"> No battle-axe blocks are planned for the Site.

Intent	Acceptable Solutions	Solution
	A3.5 Private Driveways longer than 50 m	
	<p>A private driveway is to meet all of the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 4, Column 3. • Required where a house site is more than 50 metres from a public road • Passing bays: every 200 metres with a minimum length of 20 metres and a minimum width of two metres (i.e., the combined width of the passing bay and constructed private driveway to be a minimum six metres). • Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 metres (i.e., kerb to kerb 17.5 metres) and within 50 metres of a house. • Any bridges or culverts are able to support a minimum weight capacity of 15 tonnes. • All-weather surface (i.e., compacted gravel, limestone or sealed). 	<ul style="list-style-type: none"> • Not applicable – no private driveways are required.
	A3.6 Emergency Access Way	
	<p>An access way that does not provide through access to a public road is to be avoided in bushfire prone areas. Where no alternative exists (this will need to be demonstrated by the proponent), an emergency access way is to be provided as an alternative link to a public road during emergencies. An emergency access way is to meet all of the following requirements:</p> <ul style="list-style-type: none"> • Requirements in Table 4, Column 4 on page 64 of the guidelines. • No further than 600 metres from a public road. • Provided as right of way or public access easement in gross to ensure accessibility to the public and fire services during an emergency. • Must be signposted. 	<ul style="list-style-type: none"> • Not applicable – emergency access will be via the existing road network.

Intent	Acceptable Solutions	Solution
	A3.7 Fire Service Access Routes (Perimeter Roads)	
	<p>Fire service access routes are to be established to provide access within and around the edge of the subdivision and related development to provide direct access to bushfire prone areas for fire fighters and link between public road networks for fire-fighting purposes. Fire service access routes are to meet the following requirements:</p> <ul style="list-style-type: none"> • Requirements Table 4, Column 5 on page 64 of the guidelines. • Provided as right of ways or public access easements in gross to ensure accessibility to the public and fire services during an emergency. • Surface: all-weather (i.e., compacted gravel, limestone or sealed). • Dead end roads are not permitted. • Turn-around areas designed to accommodate type 3.4 appliances and to enable them to turn around safely every 500 metres (i.e. kerb to kerb 17.5 metres). • No further than 600 metres from a public road. • Allow for two-way traffic. • Must be signposted. 	<ul style="list-style-type: none"> • Not applicable - no fire service access routes will be required as access will be via the road network which includes roads between designated bushfire prone areas and developed areas.
	A3.8 Firebreak Width	
	<p>Lots greater than 0.5 hectares must have an internal perimeter firebreak of a minimum width of three metres or to the level as prescribed in the local firebreak notice issued by the local government.</p>	<ul style="list-style-type: none"> • Owners must comply with the City of Wanneroo firebreak requirements detailed in its annual fire control notice.
Element 4: Water		
Water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire	A4.1 Reticulated Areas	
	<p>The subdivision, development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.</p>	<ul style="list-style-type: none"> • The Site is located in a developed area and is connected to scheme water, i.e.: located in a reticulated area. • Hydrants will be constructed in accordance with Water Corporation's 'No 63 Water Reticulation Standard'.

Intent	Acceptable Solutions	Solution
	A4.2 Non-reticulated Areas	• N/A
	A4.3 Individual Lots within Non-Reticulated Areas	• N/A

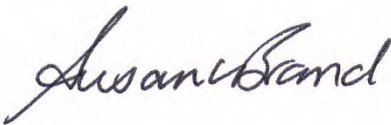
4.3 COMPLIANCE WITH RELEVANT DOCUMENTS

Sections 4.1 and 4.2 demonstrate how the remainder of the Banksia Grove development site complies with *State Planning Policy 3.7* (Department of Planning and WA Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Department of Fire and Emergency Services and WA Planning Commission, V1.3, 2017).

Development of the Site is creating residential Lots of varying sizes, and owners must comply with relevant sections of the annual firebreak notice and bushfire information prepared by the City of Wanneroo, such as total fire ban and hazard reduction programs.

4.4 COMPLIANCE STATEMENT

This Bushfire Management Plan has been prepared in accordance with the requirements of *State Planning Policy 3.7 Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) and *Guidelines for Planning in Bushfire Prone Areas* (Department of Planning, Department of Fire and Emergency Services and Western Australian Planning Commission, V1.3, 2017).

Signed: 

Date: 25 May 2021

Accreditation Number: BPAD36638

Accreditation Expiry Date: 30 April 2022



5. REFERENCES

AS 3959:2018 *Construction of Buildings in Bushfire-Prone Areas*. Standards Australia. NSW.

Bureau of Meteorology (2021). *Climate and Weather Statistics*. Accessed April 2021 from <http://www.bom.gov.au/climate/data/>.

Bushfires Act 1954 (WA)

Department of Planning, Department of Fire and Emergency Services, Western Australian Planning Commission, (2017), *Guidelines for Planning in Bushfire Prone Areas V1.3*, Western Australian Planning Commission, Perth, Western Australia.

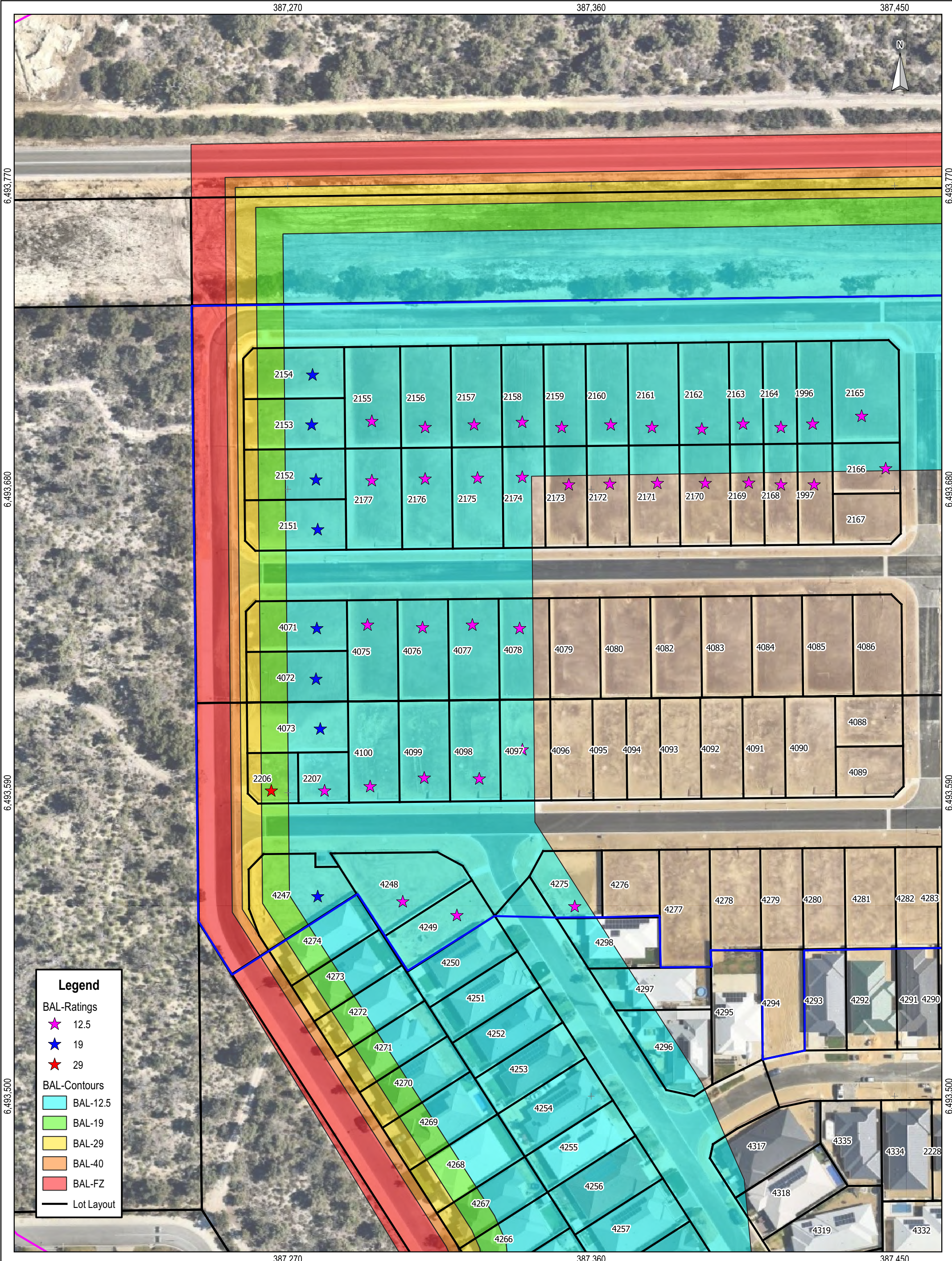
Department of Planning and Western Australian Planning Commission, (2015), *State Planning Policy 3.7 Planning in Bushfire Prone Areas*, Western Australian Planning Commission, Perth, Western Australia.

Mitchell, Williams, and Desmond, (2002), *Swan Coastal Plain 2 (SWA2 – Swan Coastal Plain subregion)*, Department of Conservation and Land Management, Accessed April 2021 from : https://www.dpaw.wa.gov.au/images/documents/about/science/projects/waaudit/swan_coastal_plain02_p606-623.pdf.

APPENDICES

APPENDIX 1: DETAILED BAL-RATING MAPS





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Aerial Photo Date: Jan 2021
Grid: GDA94 / MGA zone 50 (EPSG:28350)

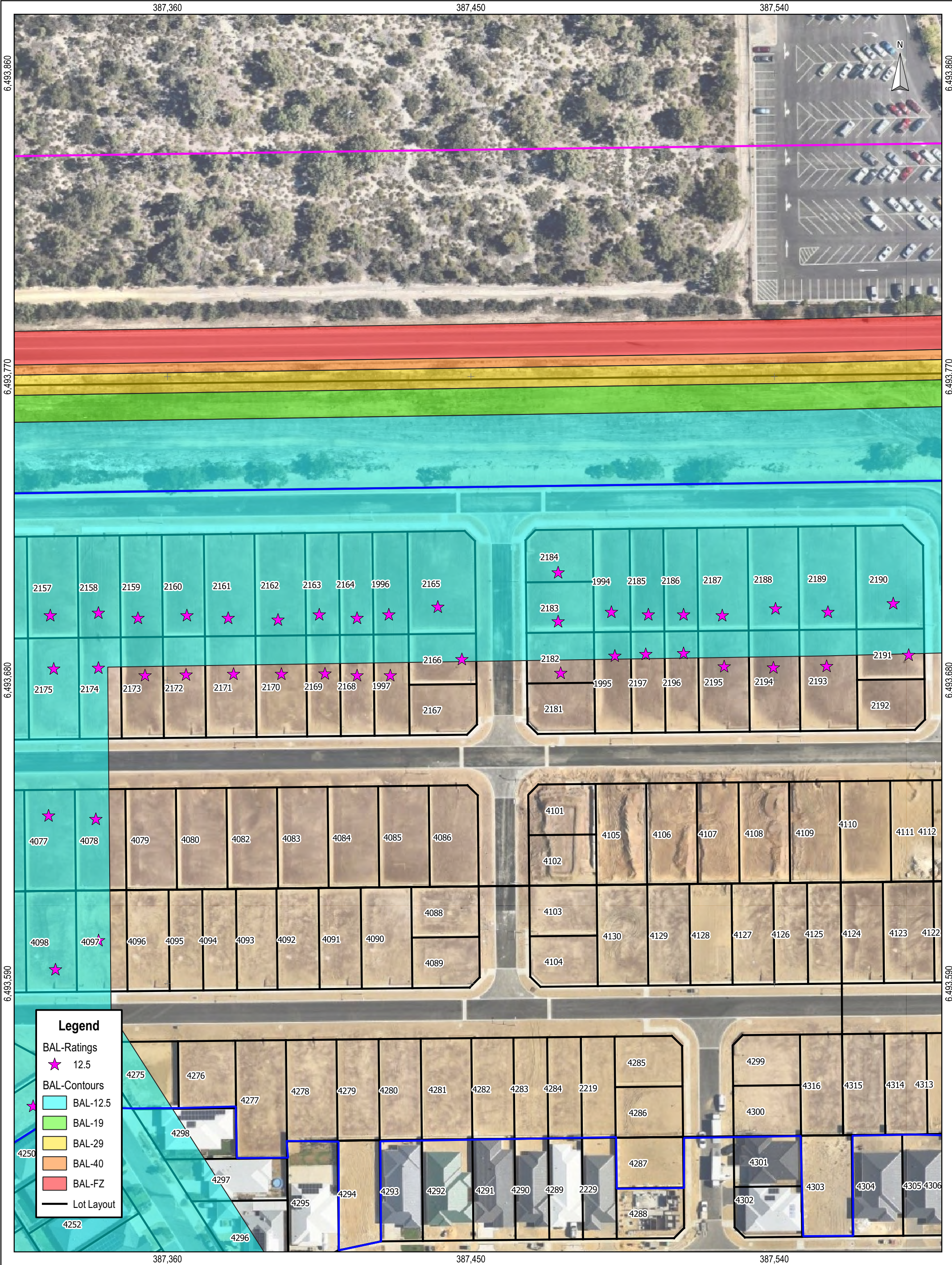
0 10 20 m

Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

Figure 1.2
BAL-contours and Ratings, Nominated Lots

Martinick Bosch Sell Pty Ltd
4 Cook St
West Perth WA 6005
Australia
t: +61 8 9226 3166
info@mbsenvironmental.com.au
www.mbsenvironmental.com.au

MBS
ENVIRONMENTAL



Scale: 1: 1,000
Original Size: A3
Aerial Photo Date: Jan 2021
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 10 20 m

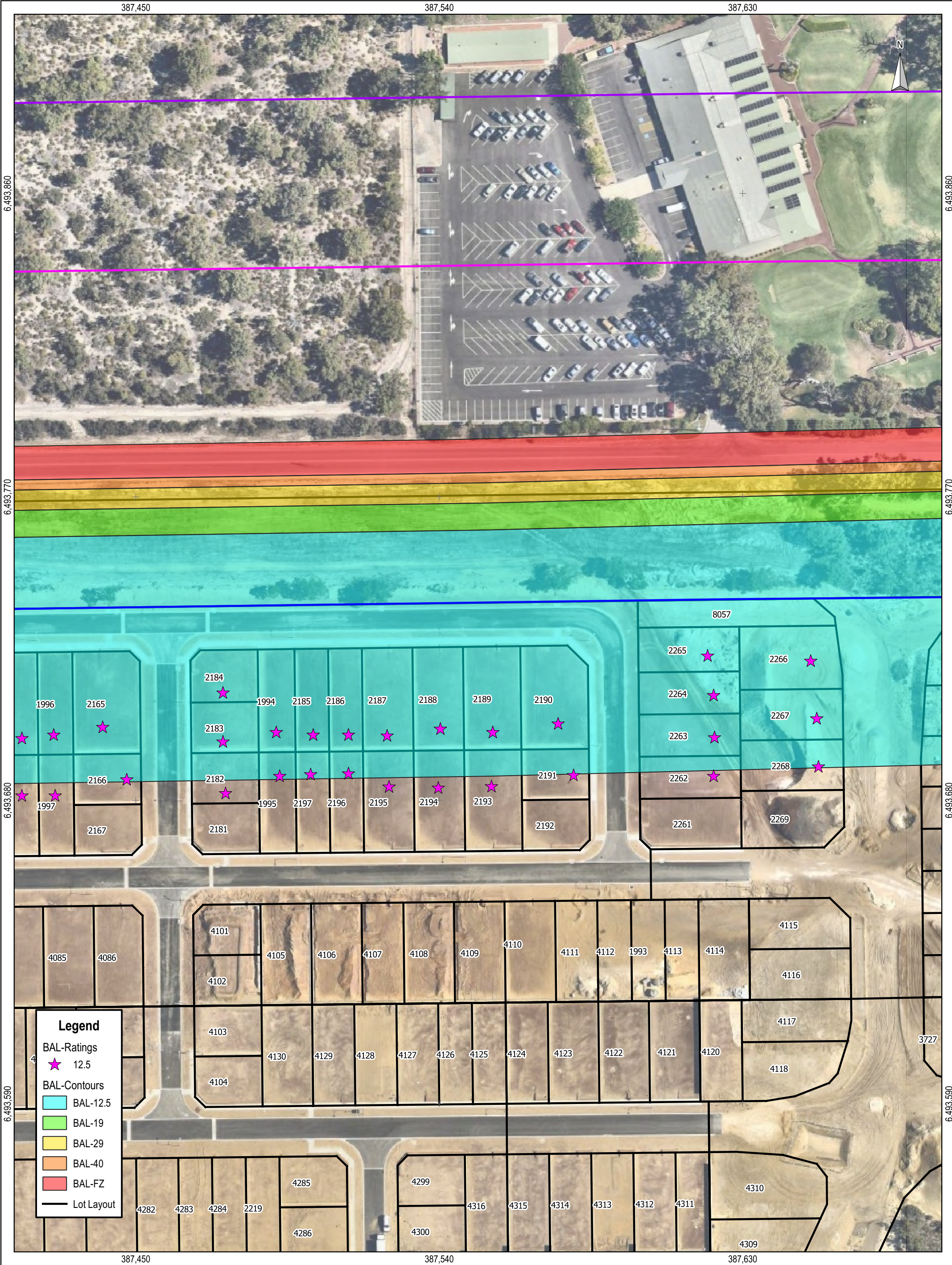
Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

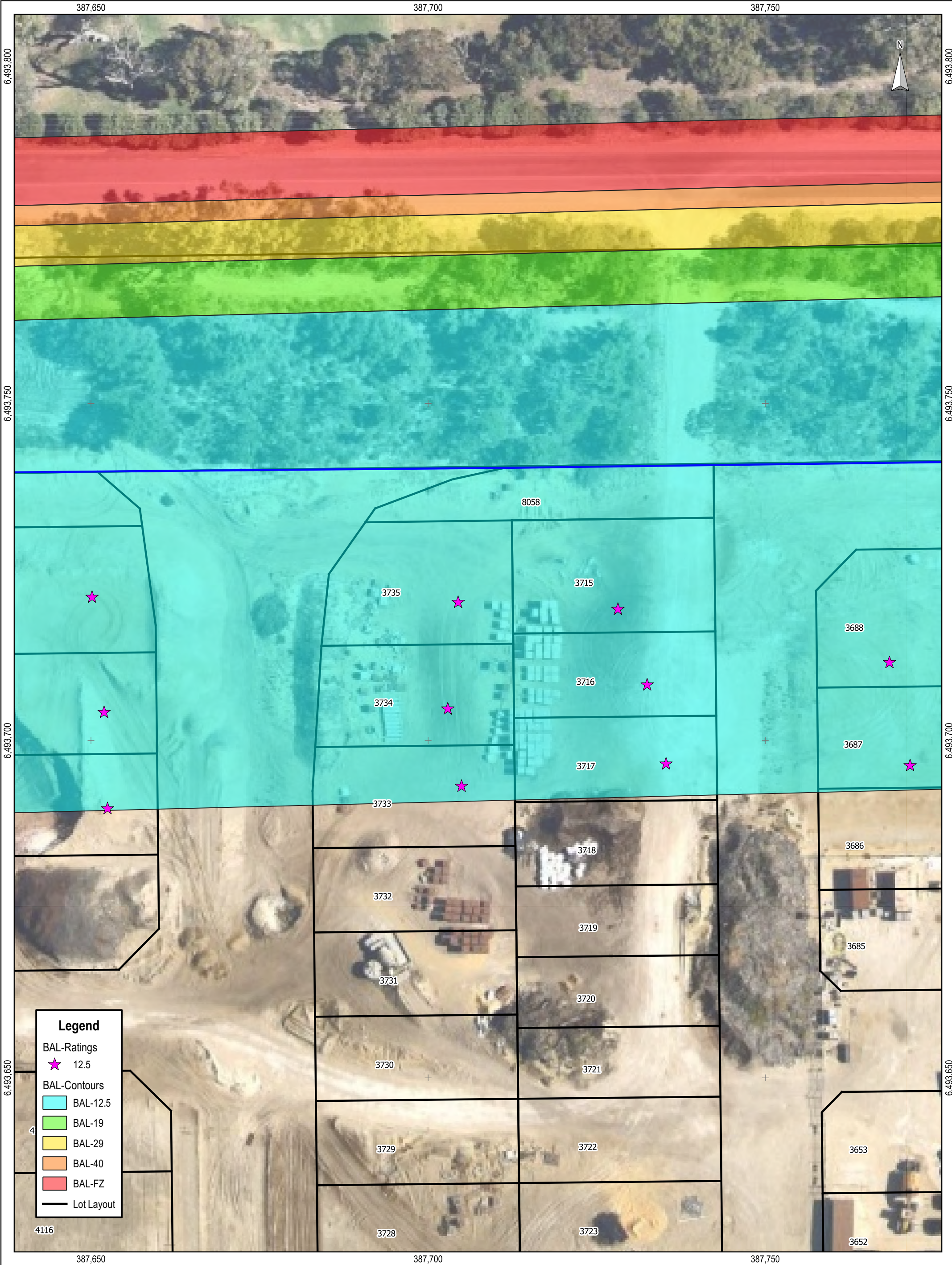
Figure 1.3

BAL-contours and Ratings, Nominated Lots

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Scale: 1: 500
Original Size: A3
Aerial Photo Date: Jan 2021
Grid: GDA94 / MGA zone 50 (EPSG:28350)

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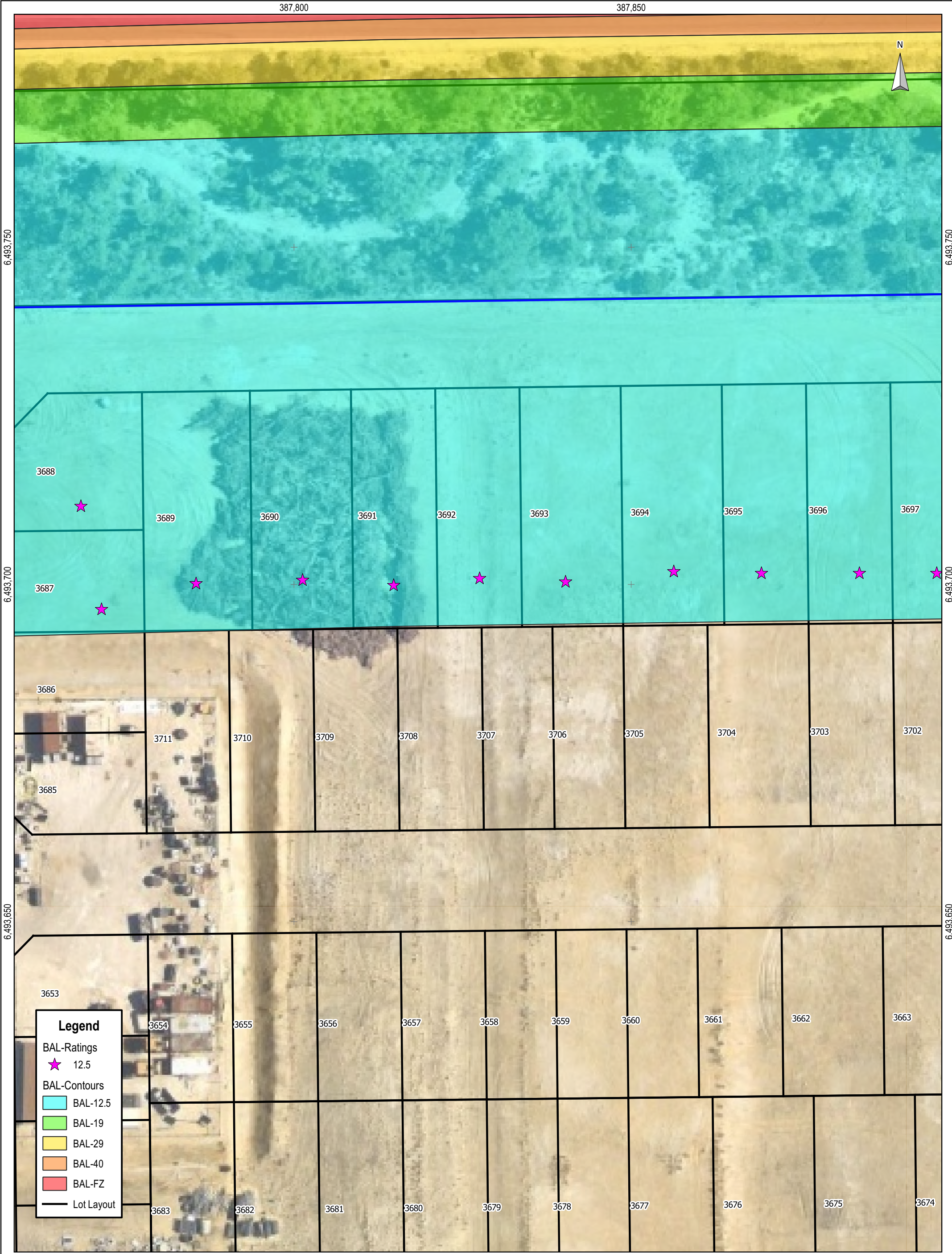
Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

Figure 1.5

BAL-contours and Ratings, Nominated Lots

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Scale: 1: 500
Original Size: A3
Aerial Photo Date: Jan 2021
Grid: GDA94 / MGA zone 50 (EPSG:28350)

0 10 20 m

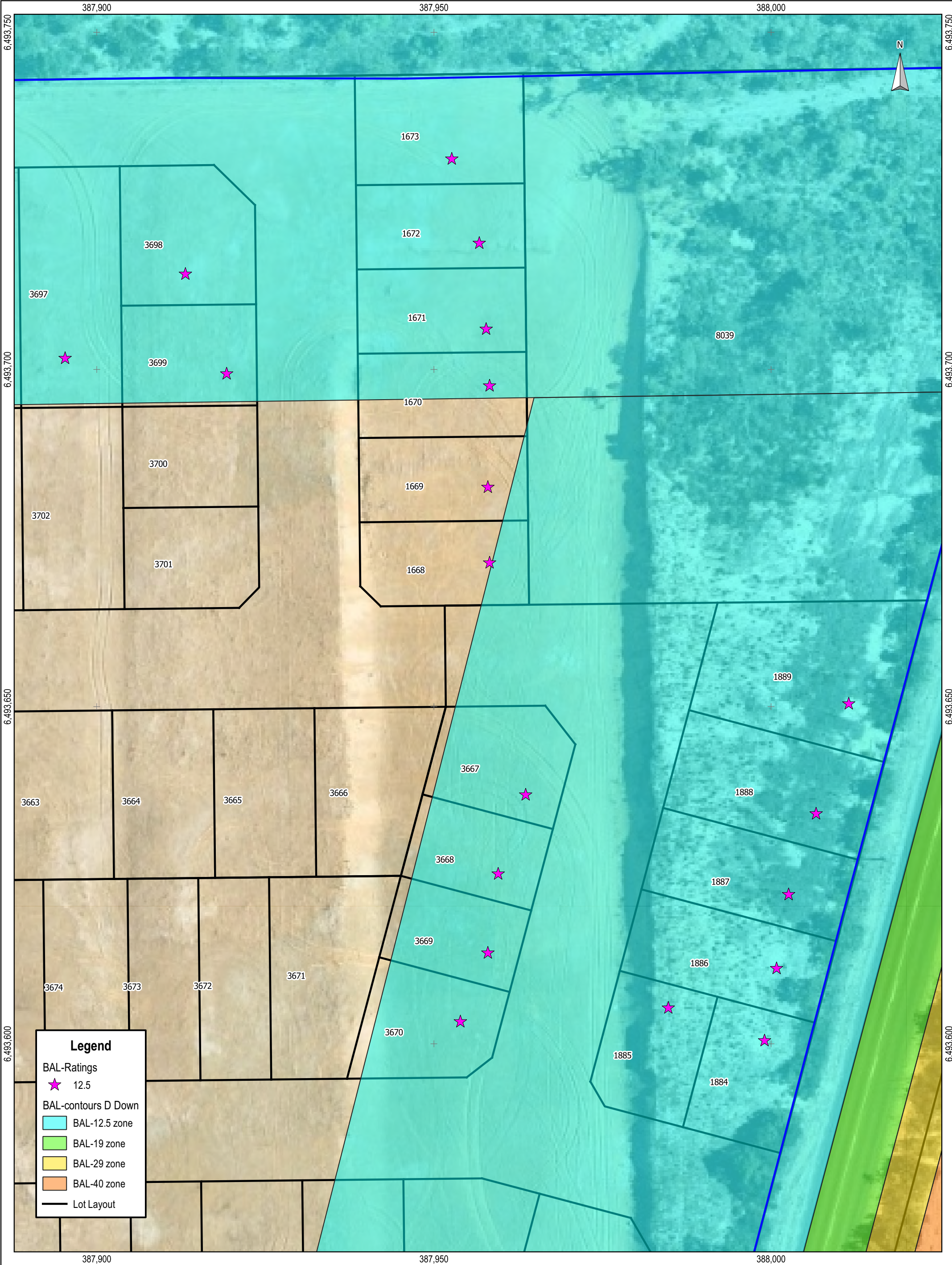
Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

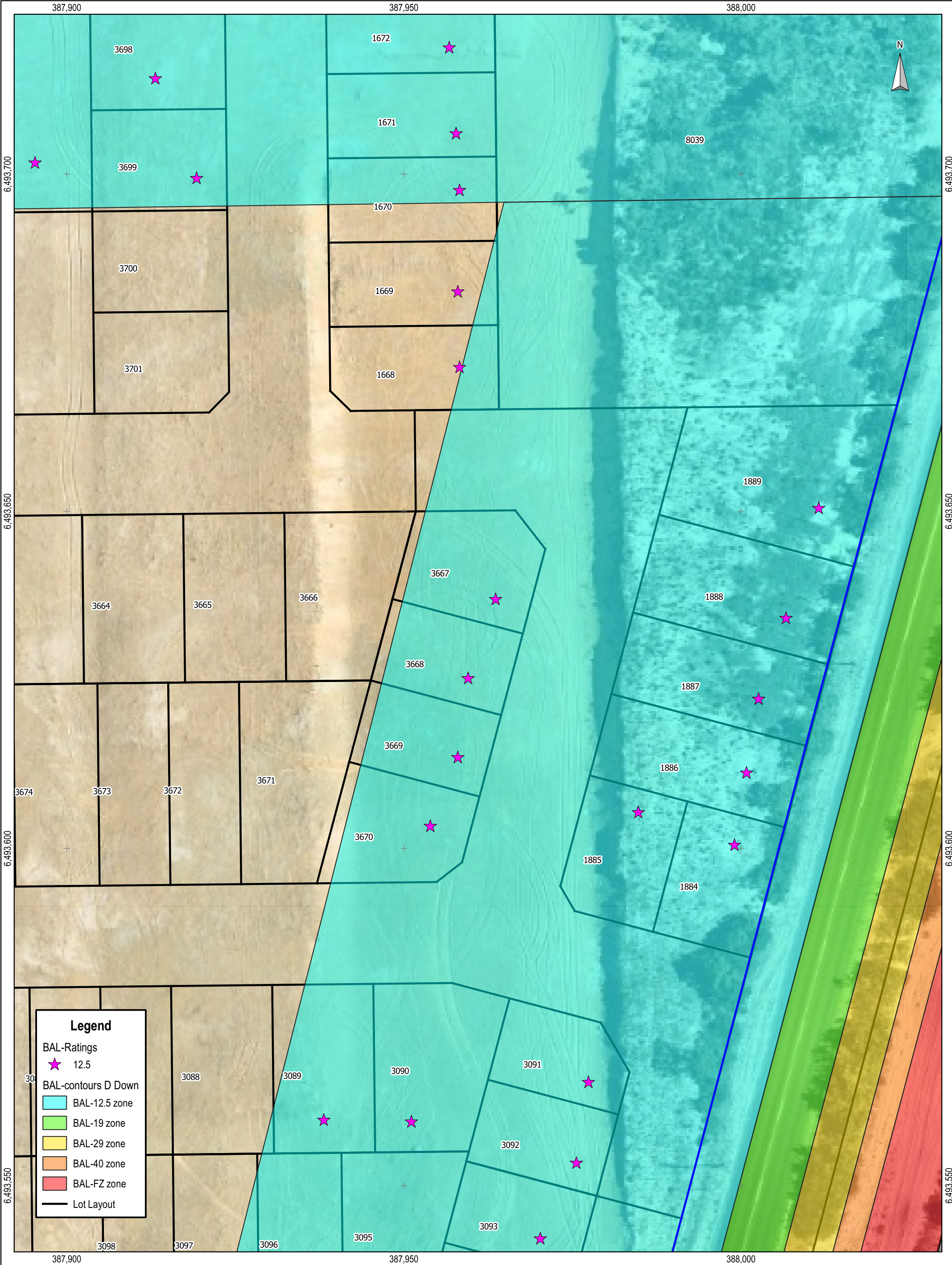
Figure 1.6

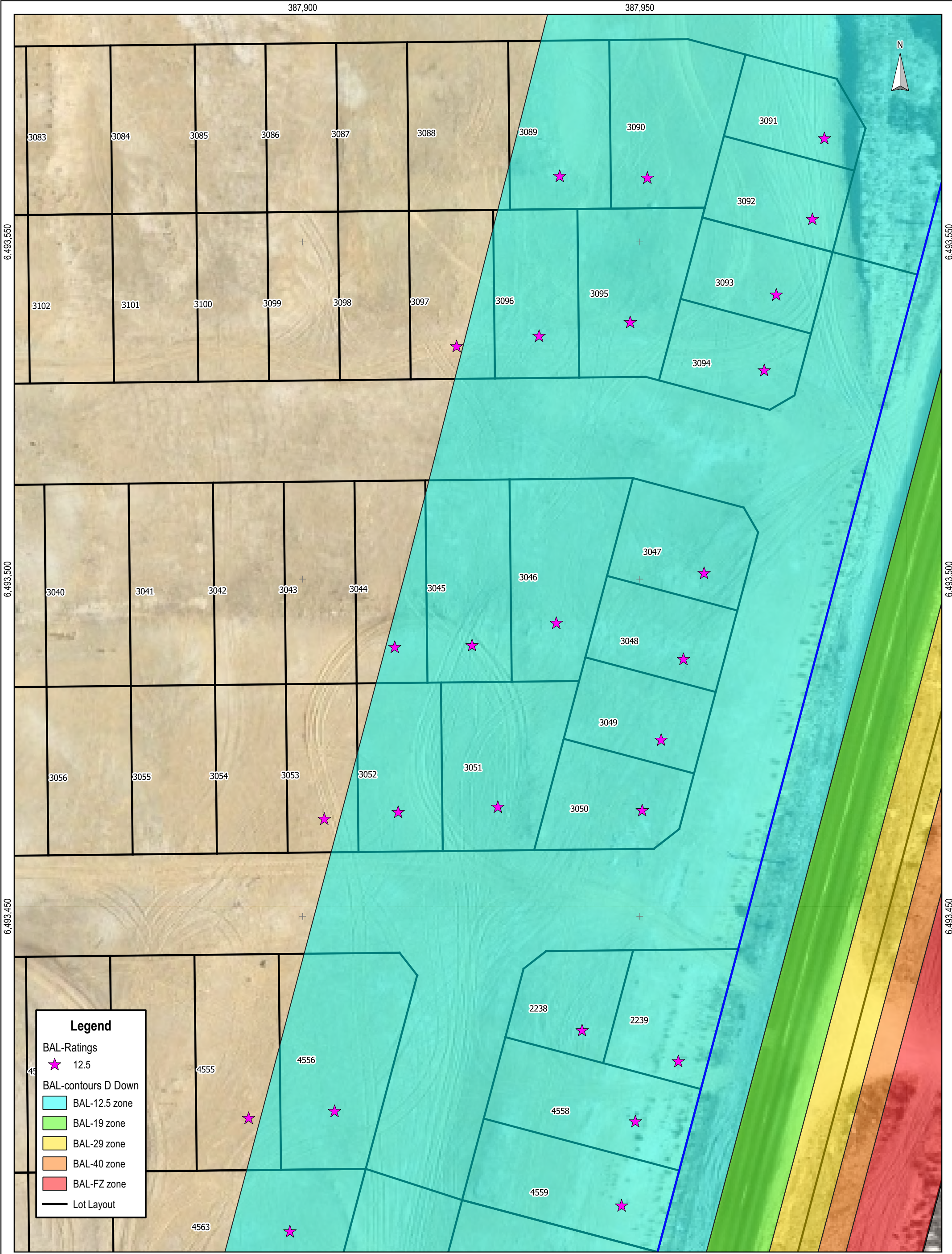
BAL-contours and Ratings, Nominated Lots

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Scale: 1: 500
Original Size: A3
Aerial Photo Date: Jan 2021
Grid: GDA94 / MGA zone 50 (EPSG:28350)

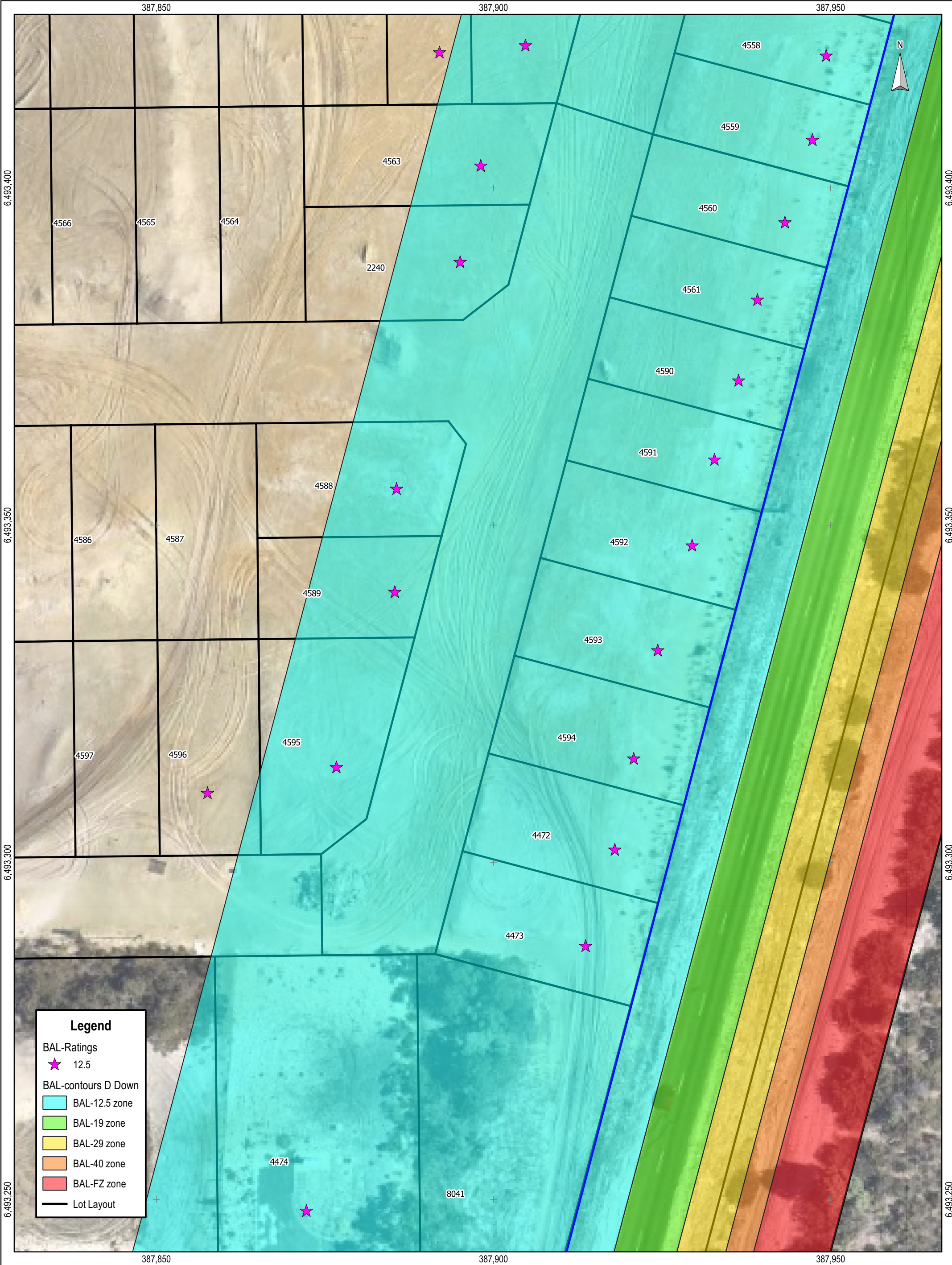
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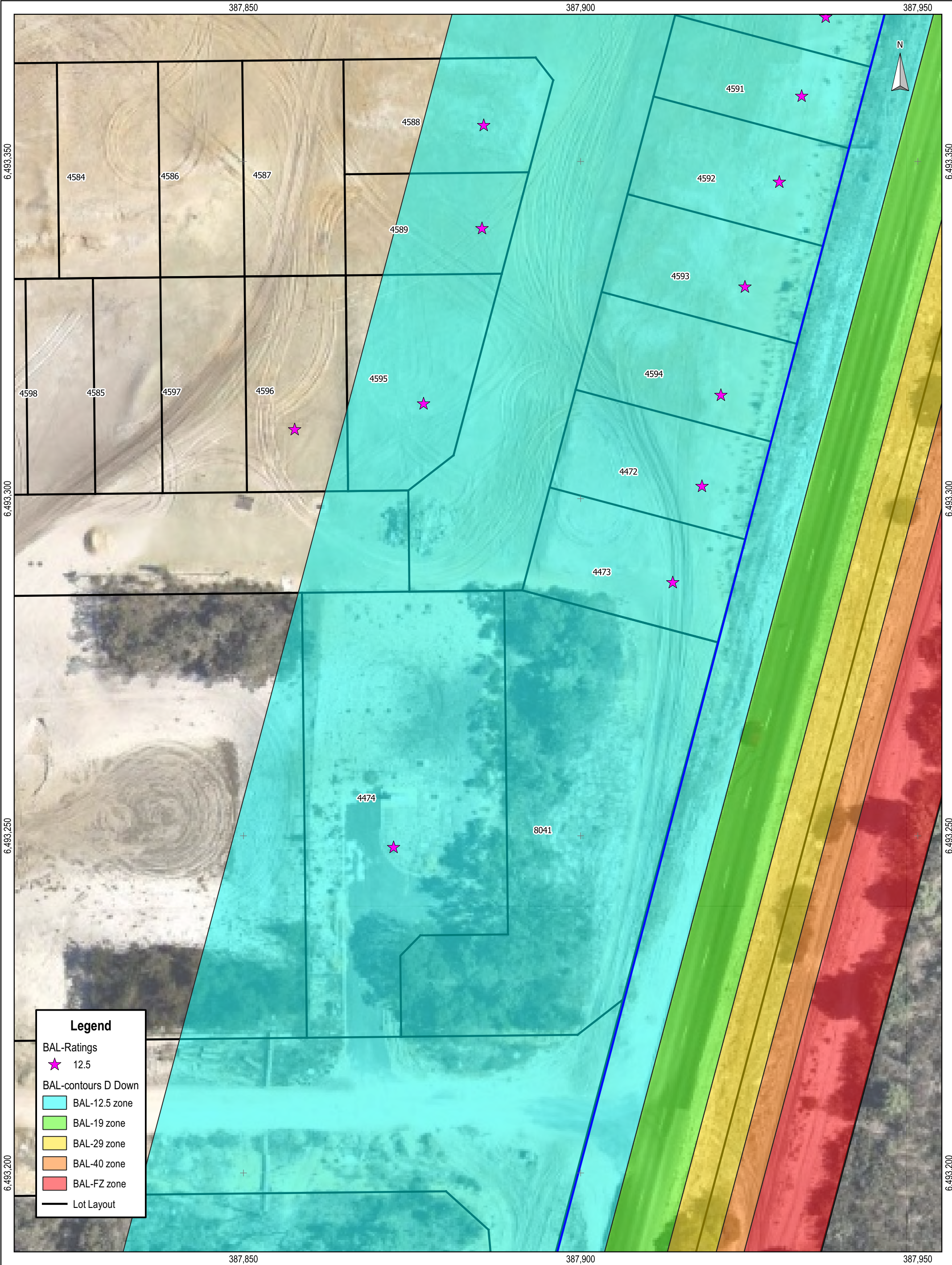
Bushfire Management Plan
Banksia Grove
LWP Property Pty Ltd

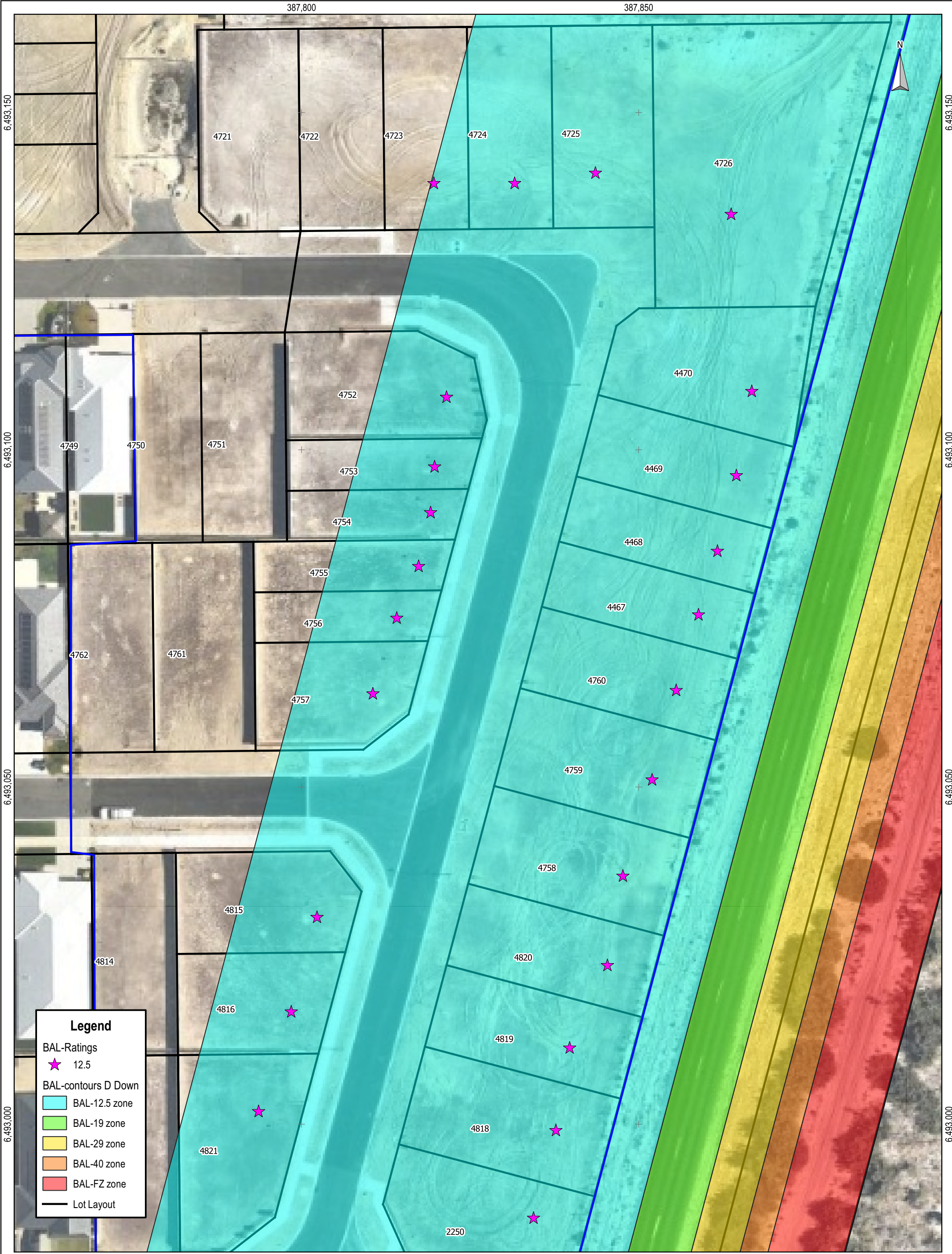
Figure 1.9
BAL-contours and Ratings, Nominated Lots

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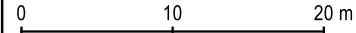
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Scale: 1: 500
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Aerial Photo Date: Jan 2021
Grid: GDA94 / MGA zone 50 (EPSG:28350)



Bushfire Management Plan
Banksia Grove
LWP Property Group Pty Ltd

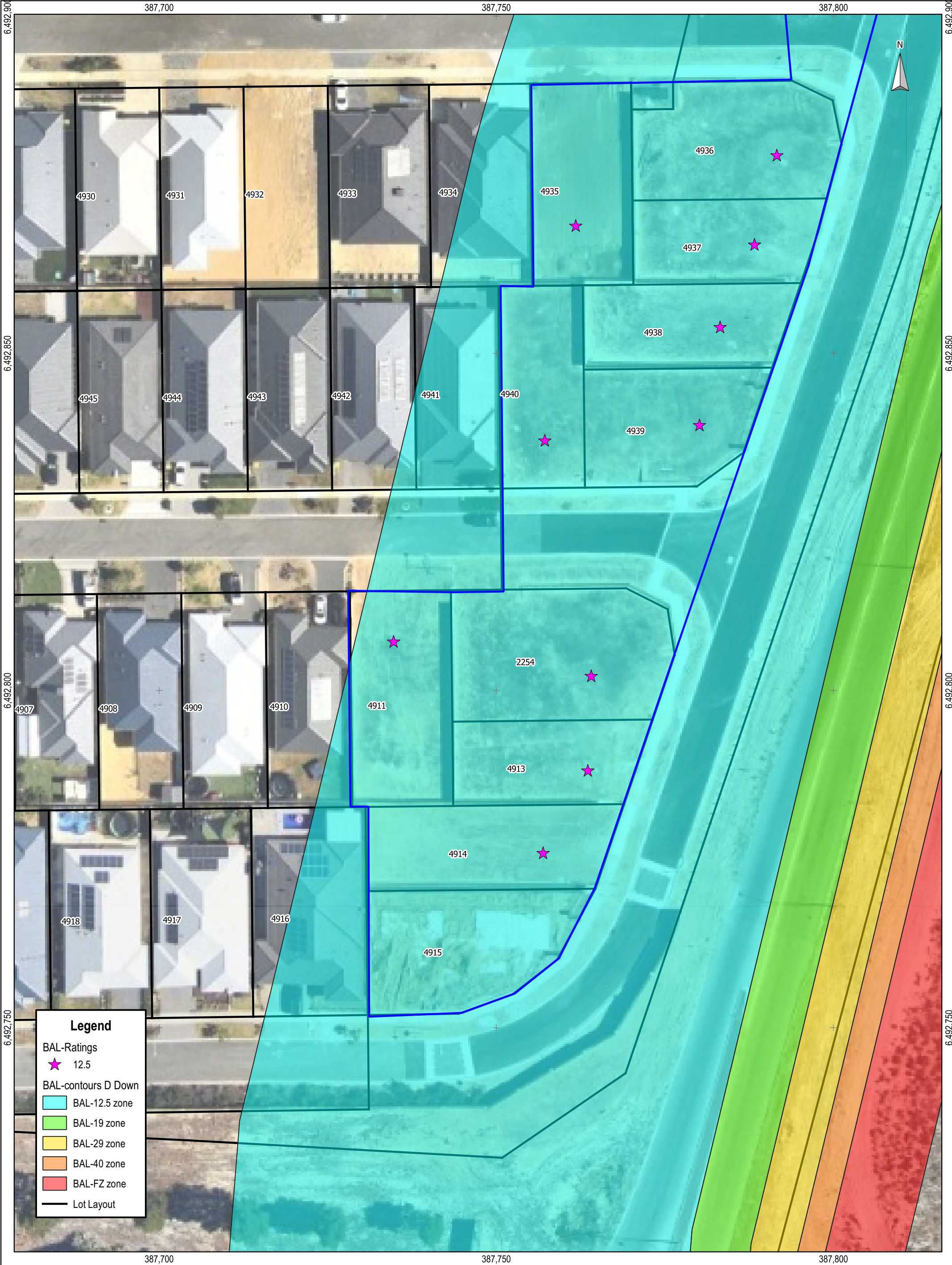
Figure 1.12

BAL-contours and Ratings, Nominated Lots

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APPENDIX 2: BAL-RATING BY LOT

Appendix 2 Table: BAL-rating by Lot

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
1668	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
1669	Outback Road	Class D Scrub	Downslope 0 - 5	> 50	BAL-12.5	
1670	Outback Road	Class D Scrub	Downslope 0 - 6	> 50	BAL-12.5	
1671	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
1672	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
1673	Outback Road	Class D Scrub	Flat	> 40	BAL-12.5	
1884	Candy Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
1885	Candy Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
1886	Candy Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
1887	Candy Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
1888	Candy Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
1889	Candy Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
1994	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
1995	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
1997	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2151	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating
2152	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating
2153	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating
2154	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
2155	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2156	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2157	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2158	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2159	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2160	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2161	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2162	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2163	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2164	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2165	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2166	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2166	Kaluta Street	Class D Scrub	Flat	> 50	BAL-12.5	
2167	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2167	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
2168	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2169	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2170	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2171	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2172	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2173	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2174	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2175	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2176	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2177	Grasshopper Street	Class D Scrub	Flat	> 50	BAL-12.5	
2181	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
2182	Kaluta Street	Class D Scrub	Flat	> 50	BAL-12.5	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
2183	Kaluta Street	Class D Scrub	Flat	> 50	BAL-12.5	
2184	Kaluta Street	Class D Scrub	Flat	> 50	BAL-12.5	
2185	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2186	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2187	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2188	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2189	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2190	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2191	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2192	Tropicbird Drive	Class D Scrub	Flat	> 100	BAL-Low	
2193	Crusader Road	Class D Scrub	Flat	> 50	BAL-12.5	
2194	Crusader Road	Class D Scrub	Flat	> 50	BAL-12.5	
2195	Crusader Road	Class D Scrub	Flat	> 50	BAL-12.5	
2196	Crusader Road	Class D Scrub	Flat	> 50	BAL-12.5	
2197	Crusader Road	Class D Scrub	Flat	> 50	BAL-12.5	
2206	Tropicbird Drive	Class D Scrub	Flat	16	BAL-29	
2207	Crusader Road	Class D Scrub	Flat	> 30	BAL-12.5	
2238	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
2239	Elegant Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
2240	Leopard Road	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
2250	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
2252	Pakooma Street	Class D Scrub	Downslope 0 -6	> 36	BAL-12.6	
2254	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
2261	Tropicbird Drive	Class D Scrub	Flat	> 100	BAL-Low	
2262	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2263	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2264	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
2265	Tropicbird Drive	Class D Scrub	Flat	> 50	BAL-12.5	
2266	Forever Boulevard	Class D Scrub	Flat	> 50	BAL-12.5	
2267	Forever Boulevard	Class D Scrub	Flat	> 50	BAL-12.5	
2268	Forever Boulevard	Class D Scrub	Flat	> 50	BAL-12.5	
2269	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
3043	Ironcap Street	Class D Scrub	Flat	> 100	BAL-Low	
3044	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3045	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3046	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3047	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3048	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3049	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3050	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3051	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3052	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3053	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3054	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3087	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3088	Elegant Road	Class D Scrub	Downslope 0 -5	> 100	BAL-Low	Needs to avoid blue contour in SE corner to prevent BAL-12.5 rating
3089	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3090	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3091	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3092	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3093	Elegant Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3094	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3095	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
3096	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3097	Ironcap Street	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
3098	Ironcap Street	Class D Scrub	Flat	> 100	BAL-Low	
3652	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3653	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3654	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3655	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3656	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3657	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3658	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3659	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3660	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3661	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3662	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3663	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3664	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3665	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3666	Candy Street	Class D Scrub	Flat	> 100	BAL-Low	
3667	Candy Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
3668	Candy Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
3669	Candy Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
3670	Candy Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
3671	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3672	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3685	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3686	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3687	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
3688	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3689	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3690	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3691	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3692	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3693	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3694	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3695	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3696	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3697	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3698	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3699	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3700	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3701	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3715	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3716	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3717	Outback Road	Class D Scrub	Flat	> 50	BAL-12.5	
3718	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3719	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3720	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3721	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3722	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3723	Outback Road	Class D Scrub	Flat	> 100	BAL-Low	
3724	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3725	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3726	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	
3727	Elegant Road	Class D Scrub	Flat	> 100	BAL-Low	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
3728	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
3730	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
3731	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
3732	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
3733	Forever Boulevard	Class D Scrub	Flat	> 50	BAL-12.5	
3734	Forever Boulevard	Class D Scrub	Flat	> 50	BAL-12.5	
3735	Forever Boulevard	Class D Scrub	Flat	> 50	BAL-12.5	
4071	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating
4072	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating
4073	Tropicbird Drive	Class D Scrub	Flat	> 20	BAL-19	4.1 m setback from front Lot boundary to avoid BAL-29 rating
4075	Grasshopper Street	Class D Scrub	Flat	> 40	BAL-12.5	
4076	Grasshopper Street	Class D Scrub	Flat	> 40	BAL-12.5	
4077	Grasshopper Street	Class D Scrub	Flat	> 40	BAL-12.5	
4078	Grasshopper Street	Class D Scrub	Flat	> 40	BAL-12.5	
4079	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4080	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4081	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4082	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4083	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4084	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4085	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4086	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4088	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4089	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
4090	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4091	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4092	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4093	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4094	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4095	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4096	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4097	Crusader Road	Class D Scrub	Flat	> 45	BAL-12.5	
4098	Crusader Road	Class D Scrub	Flat	> 45	BAL-12.5	
4099	Crusader Road	Class D Scrub	Flat	> 45	BAL-12.5	
4100	Crusader Road	Class D Scrub	Flat	> 45	BAL-12.5	
4101	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4101	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4102	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4102	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4103	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4103	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4104	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4104	Kaluta Street	Class D Scrub	Flat	> 100	BAL-Low	
4105	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4106	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4107	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4108	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4109	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4110	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4111	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
4112	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4113	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4114	Grasshopper Street	Class D Scrub	Flat	> 100	BAL-Low	
4115	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
4116	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
4117	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
4118	Forever Boulevard	Class D Scrub	Flat	> 100	BAL-Low	
4121	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4122	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4123	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4124	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4125	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4126	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4127	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4128	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4129	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4130	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4247	Tropicbird Drive	Class D Scrub	Flat	19	BAL-19	3.5 m setback from Lot boundary to avoid BAL-29 rating
4248	Crusader Road	Class D Scrub	Flat	> 45	BAL-12.5	
4249	Fairywren Street	Class D Scrub	Flat	> 45	BAL-12.5	
4275	Crusader Road	Class D Scrub	Flat	> 45	BAL-12.5	
4276	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4277	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
4278	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4279	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4280	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4281	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4282	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4283	Crusader Road	Class D Scrub	Flat	> 100	BAL-Low	
4447	Grandis Blvd	Class D Scrub	Flat	> 50	BAL-12.5	
4467	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4468	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4469	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4470	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4472	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4473	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4474	Grandis Blvd	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	WWPS
4555	Leopard Road	Class D Scrub	Downslope 0 -5	> 40	BAL-12.5	
4556	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4558	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4559	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4560	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4561	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4563	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4585	Leopard Road	Class D Scrub	Downslope 0 -5	> 100	BAL-Low	
4588	Leopard Road	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
4589	Leopard Road	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4590	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4591	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4592	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4593	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4594	Leopard Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4595	Leopard Road	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4596	Leopard Road	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	Needs to avoid blue contour in SE corner to prevent BAL-12.5 rating
4597	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4598	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4599	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4600	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4601	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4602	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4603	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4604	Leopard Road	Class D Scrub	Flat	> 100	BAL-Low	
4720	Potoroo Street	Class D Scrub	Flat	> 100	BAL-Low	
4721	Potoroo Street	Class D Scrub	Flat	> 100	BAL-Low	
4722	Potoroo Street	Class D Scrub	Flat	> 100	BAL-Low	
4723	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4724	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4725	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4726	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	GHS

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
4733	Grandis Blvd	Class D Scrub	Flat	> 100	BAL-Low	
4750	Potoroo Street	Class D Scrub	Flat	> 100	BAL-Low	
4751	Potoroo Street	Class D Scrub	Flat	> 100	BAL-Low	
4752	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4753	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4754	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4755	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4756	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4757	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4758	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4759	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4760	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4761	Dragonfly Road	Class D Scrub	Flat	> 100	BAL-Low	
4762	Dragonfly Road	Class D Scrub	Flat	> 100	BAL-Low	
4814	Dragonfly Road	Class D Scrub	Flat	> 100	BAL-Low	
4815	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4816	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4818	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4819	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4820	Potoroo Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4821	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4822	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4863	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4864	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	

Lot	Address	Vegetation Type	Slope	Minimum Distance to Vegetation (m)	BAL-rating	Comments
4865	Potoroo Street	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4911	Bluebill Road	Class D Scrub	Downslope 0 -5	> 50	BAL-12.5	
4913	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4914	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4915	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4935	Pakooma Street	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4936	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4937	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4938	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4939	Solandri Bend	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
4940	Bluebill Road	Class D Scrub	Downslope 0 -5	> 35	BAL-12.5	
8000	Grandis Blvd	Class D Scrub	Flat	N/A	N/A	POS
8039	Candy Street	Class D Scrub	Flat	N/A	N/A	Drainage
8041	Grandis Blvd	Class D Scrub	Flat	N/A	N/A	POS
8057	Forever Boulevard	Class D Scrub	Flat	N/A	N/A	POS
8058	Forever Boulevard	Class D Scrub	Flat	N/A	N/A	POS